TheRandyMan1967 instructional notes:

While "cleaning up" this project, I thought others may like to know my process, so they could create other such projects to share on the web.

First, the system I use and the needed software:

My machine is a Windows 7 Pro (64-bit) Lenovo T420 ThinkPad laptop.

All word processing uses Word 2010 and/or Adobe Acrobat 9 Standard.

Most graphic work is done with Windows 7's included Paint program with occasional help from IrfanView version 4.75.

All of the above software is either original installs on the system or, in the case of IrfanView, available free on the internet, so basically I paid nothing extra. That's not to say they are un-copyrighted or freeware material. I legally own the right to use the above software having bought the system pre-installed or downloaded from the original software writers/designers own website.

The first step in any such project, assuming I'm starting from a downloaded PDF file, is to load the file in Acrobat and quickly flip through to insure all pages are included. Then using Acrobat, I export all pages as JPG files @ 300 dpi in full color. After that I separate the pages into their own folders (Rulebook, Adventure Book, Maps, etc.) to make it easier to work on each "Book" individually.

Second, I edit (with Paint) each JPG page to "crop-out" all artwork (photos, drawings, line-art, and logos) saving (as a BMP file this time @ 300 dpi) each element individually. Then, using Paint or IrfanView, I resize each image to a standard size depending on each original use of the artwork (quarter-page, half-page, inline art, etc.) Sometimes more extensive editing is needed (such as in the case of artwork that spans two page or a large poster/map that was saved "cut" as multiple 8.5 x 11 pages), more on this later. (see Heavy Editing below)

Why BMP vs. JPG? Acrobat exports the original pages as JPG by default (although you can change this through the settings menu) and the images are quite good. But once you start editing or resizing the images, saving as JPG, to save file space, tends to "blur" the image colors. By saving as BMP, the original "crispness" of the picture is preserved. This is useful info for anyone doing any kind of image manipulating. Convert the "original" image (JPG, PNG, WEBP, etc.) to BMP and save, do any necessary editing to the BMP file, then, when you are satisfied with your edits, convert the "final" image back to JPG (if you really “must”) for final publishing (either PDF, print, or web.)

After all the art is "extracted", I like to resize all the JPG pages to a standard size before the next step. For most TSR D&D product this means 8.5 x 11 inches @ 300 dpi (be careful not every page in the project actually prints full page, but the various books and adventure modules do.)

(At 300 dpi, a full 8.5 x 11 inch page will be 2550 x 3300 pixels)

The third step in a simple "clean up" project is the text. Several pages will show shadows around the edges where a thicker book does not sit "flat" against the scanner platform, or bleed through "echoes" from the back side of the page being scanned. And all page-by-page scanning is by default "skewed" or slanted to some degree no matter how careful we are at placing the documents on the scanner. The first two problems, shadows and bleed through, are easily fixed by simply using IrfanView to convert the pages to 1-bit color depth (b&w).

Everytime you make any changes like this, be sure to save the new files to their own folder in case you need to "step back", you will have an unchanged version of each page as you go. (I know this will lead to many extra files on your system, but the alternative is to start the process over from the beginning if you mess up. Besides when the project is finished, you can delete all the files except for your "new" clean product and the "original" PDF (just in case.) (IMPORTENT! Always save the original!!!)

After converting to b&w, open each page in Paint and immediately save it back to 24-bit color (don't worry the pages will still be black & white, but the pallete is back to color.) Next visually check each page for any stray "smudges" from fingerprints and coffee stains to the occasional hand written notes in the margins, etc. and clean them up. Also at this point, re-color any parts of the page that should be colored (for example, in the Dragon Quest books just under the page title header there is a solid red line before the main page text.) As an added step I also "colored" the dice in the rulebook and the inside back cover just for fun.

The third case, "skewed" pages will be addressed in Heavy Editing below.

The fourth step is to "re-insert" any color artwork back onto the new clean text pages. Simply use Paint to "paste from" the pictures you saved in step two. (you may have to tweak the art a little to fit over the b&w images and maybe manually erase any parts not covered by the color versions. When you’re satisfied with each page, save the final BMP.

The final step is to assemble each separate book. Open a new document in Word. Set the pages to 8.5 x 11 inches AND 0 inches for all four margins (ignore the warning message.) Now use "Insert"-"Picture" to add the final BMP pages from step four. Double-check that each page is in the correct order, and all pages are present, if so save the document as Rulebook.docx (or whatever name is appropriate.) Then "Save As" a PDF this time. And presto... You now have a "cleaned" rulebook. Now do the same five steps for the other two books in the set. (the Adventure Book and the 4-page What's Next Book/leaflet)

Why save both DOCX and PDF versions of our final book? One simply reason, Acrobat will as mentioned above, extract the pages best as JPGs, but Word can save each image as multiple formats (most importantly BMPs.) Let's say you find a mistake a week from now and you have already deleted all the files you created here. Well, Word has saved them in the DOCX file, and even better, you can simply save the single page, edit it, and simply "Change Picture" to replace the page in question. The DOCX is for your own use, it is best to only share/distribute the final PDF file.

Heavy Editing:

Sometimes a graphic will overlap from one page to another, such as the case of the inside cover of many books (and most adventure modules.) The covers were not stapled to the rest of the book as a rule, but meant to be used as a screen for the DM to hide important information from the players. For Dragon Quest these only contained quick reference charts and DM maps, so matching them up only meant resizing them. But in some cases (modules mostly) the maps have to actually be tweaked extensively to connect properly.

A special case is the poster maps used as playing boards with many of these games. They are almost always scanned in sections, usually 4 pages across by 2 pages tall. In most cases there are significant gaps and noticeable skewing present and simply pasting them side-by-side is not enough. In this case, the best solution involves extensive cut and paste work to fill the gaps. A search of the internet will often times find a "complete" map in at least decent resolution that can hopefully be resized without too much blurring. In the case of Dragon Quest, the included map WAS a single "complete" map with the exception of a half-inch missing horizontally across the entire middle of the map (you don't notice it because instead of leaving the gap open, the creator of the PDF closed the gap in the map.) For this I had to "cut" the map in half and recreate the gap manually with several cut and paste operations. The actual map was not that hard in and of itself, but also missing were two lines of instructions on both sides of the map. Not having access to the original fonts used to create the text, I had two options, use cut-and-paste to fill in the missing lines, or totally recreate the text boxes from scratch with the closest matching font I could find and replace both sides of the map with the new graphic. In the end, I attempted the first method, there was enough text on the rest of the map to recreate the two lines in question, the only exception being the number "4", for that I hand modified the number "1". I was very happy with the final result, so I left it at that.

One final note about the map in question, the map uses 3-D perspective walls to separate the "rooms" on the map. As such, all squares are not true 1 inch by 1 inch, but a little resizing overall did help greatly, but the final poster map actually prints at 28.25 x 37.8 inches.

The next heavily edited step was the cards. From the looks of the included pictures (see z-Cards.pdf), it looks as though the person who created the original PDF file simply laid the physical cards on a wrinkled white table cloth and stood overhead and literally took a picture with a cell phone, the cards are not aligned well nor do they lay flat, and there seems to be some shine from the overhead light or camera flash. That said, I actually have seen worse.

My solution to this problem was to basically re-master the cards from scratch. First, using Paint, I resized each page to the proper height. Since the cards are 3.5 inches tall, if the picture showed 3 rows of cards that meant the page should be 10.5 inches tall (3150 pixel @ 300 dpi), leaving the "Maintain aspect ratio" box checked insured the proper width no matter the number of cards in each row. (remember to save each page as BMP.) I then picked the prettiest looking card and cropped it out at 2.5 x 3.5 (750 x 1050 pixels), then I "cleaned" it leaving only the black outer border, the hollow Dragon Quest logo and a black picture border on a clean white background. Saving the file as Card_Template.bmp I now created 9 blank card fronts with different color faces. (see the cover page in 04-Cards.pdf)

The Character, Monster, Treasure, and Item Cards all had unique art for the card fronts, so I had to extract out all the artwork. I re-edited Card_Template changing all black to yellow and resaved as Card_Template2.bmp. Then I reopened each resized card page (in Paint again) and "Paste from" Template2 with "Transparent selection" checked and aligned over each card on the page so as best to outline the art itself. After each page was done, I cropped out each art piece and saved them separately. It was then a simple matter of pasting the art into the center box of the blank card fronts and typing the card names below the pictures. For this I used Paints Text box option, setting the font to Arial Narrow, size 36, Bold on and set color 1 to white for the darker backgrounds (red, blue, brown, green and gold) and black for the lighter backgrounds (grey, sky blue, and lime green). One minor change I made here was the naming of some of the monsters (such as 'Dragon, Red' instead of 'Red Dragon'). I then created a page image of the individual cards 3x3 and saved them as page01.bmp, page02.bmp, etc.

I then opened Word and inserted these "pages" as the "odd" numbered front pages. For the backs of the cards, I simply recreated them with a simple blank table format, easy enough as each card within a group is identical except for the data on the form. Keep in mind when creating cards by the sheet like this, on the front of the page the top row of cards are 1, 2, 3 but on the backside of the page it is 3, 2, 1. This will ensure the cards have the matching fronts and backs when printed and cutout. (also remember to cut your cards from the front-side.) When this was done, I saved the file as a DOCX and after a final proof-read, as the final PDF. I highly recommend after finishing a "book" of any sort, that you set it aside for a few days or a week while you begin another project, and then come back to your "book" with fresh eyes and re-read it checking for typos before posting your "final" edition to the web. Or even better give a copy to a friend to read, they may see an error you didn't notice, or a particular phrasing that doesn't make sense to them. Believe me the extra effort will create a much better final product.

The final item I'll address in this how-to article is the afore-mentioned "skewing" of certain pages. For text pages, on a print-only product minor skewing will not be noticable to the reader. But if the product is also to be used for "on-line" reading, it is best to run an OCR scan so the document is "searchable" by the user. Luckily this is pretty simple. Load the document in Acrobat and under the "Document" tab, select "OCR Text Recognition". Acrobat will automatically "de-skew" the pages while it runs OCR, just remember to save the document after OCR finishes to save both the "de-skewed" page images and the actual OCR text itself. Keep in mind that while OCR is a wonderful tool, it does have its own limitations and is not 100% accurate. One word of warning, do not try to run OCR on full page art pages as sometimes Acrobat will try to "de-skew" them leaving white edging artifacts around your art.

For "skewed" art work, there are two solutions: first, if the art is a picture or hand-drawn art and the edges are not important to the overall image simply crop the image "square" and save the new image. (This usually only means trimming a few pixels from the image's edges.)

For more drastic "noticeable" skewing or when you really must preserve the entire image, Irfanview offers very fine rotation editing. One hint about this process, every rotation introduces some "blurring" or "dithering" of the image, this is most noticeable in b&w images. If you rotate an image 10 degrees and then decide it should have been 12 degrees, don't "re-rotate" the image, instead go back to the un-rotated image and rotate IT by 12 degrees, the result will be much cleaner.

Both of the above solutions assume you are working from someone else's scanned PDF. If you actually still have the original paper products, you can rescan them yourself at a higher resolution concentrating on the art only until you get the best quality image possible, but some of these products date back to the 70's or earlier, so if you still have them after all these years, more power to you.

I'll stop at this point, but look for future "how-to" articles in upcoming projects. For more about repairing maps, see the how-to included with my upcoming Complete "Gangbusters" remaster.